

Remarks

The title has been objected to as not being descriptive. Accordingly, as required by the Examiner, the specification has been amended to provide a new title that is believed to be clearly indicative of the invention to which applicant's claims are directed.

The drawings have been objected to under 37 CFR 1.83(a) as not showing every feature of the invention specified in the claims. In particular, the Examiner has stated that the plurality of electromagnets encased within the rotor must be shown or the feature canceled from the claims. Accordingly, applicant has canceled, without prejudice, dependent claims 6 and 12, which are directed to this feature.

Claims 6 and 12 stand rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner has stated that the specification does not contain a full, clear, concise, and exact written description of how the electromagnets will be encased within the rotor. Accordingly, applicant has canceled claims 6 and 12, without prejudice.

Claims 1-3, 5, 7-9, and 11 stand rejected under 35 U.S.C. 103(a) as being obvious, and therefore unpatentable, over Patarchi (reference N) and Shtipelman (reference A). Claims 4 and 10 stand rejected under the same statute as being unpatentable over Patarchi and Shtipelman, in further view of Lohr (reference C). Claims 6 and 12 stand rejected under the same statute as

being unpatentable over Patarchi and Shtipelman, in further view of Tawse (reference D). These rejections are respectfully traversed, with respect to remaining claims 1-5 and 7-11.

Independent claim 1 is very specifically directed to "A disk type D.C. motor comprising: a stationary case constructed of a non-ferrous material; a motor shaft positioned within the case on a central axis of the motor; a rotor fixedly attached to said motor shaft perpendicular to said central axis, said rotor being in the shape of a circular disk; an even plurality of magnets encased within said rotor equally spaced proximate a peripheral edge thereof, adjacent ones of the plurality of magnets being of opposite magnetic polarity; a like plurality of pairs of facing ferromagnetic pole pieces fixedly mounted within said case, each pair of facing pole pieces being spaced in correspondence with said plurality of magnets, the facing pole pieces of each pair being positioned on opposite sides of said rotor in spaced proximity to one of said plurality of magnets, the facing pole pieces of each pair being in firm contact with a core that is mounted within said case outside said peripheral edge of said rotor, each of the cores being wound with a coil such that an electric current flowing in the coil induces a magnetic polarity in an associated pair of pole pieces." Independent claim 7 is similarly specifically directed to a motor as recited in claim 1 having a plurality of rotors positioned axially along the motor shaft to increase the power applied to the motor shaft. These specifically claimed structural features of applicant's invention provide a disk type motor which is controllable and which also exhibits a much higher output torque to size ratio than motors

constructed in accordance with the prior art. The above-recited features of applicant's specifically claimed invention are simply not shown or suggested by any of the references of record, taken alone or in any combination.

The Examiner states that the Patarchi reference teaches every aspect of applicant's claimed invention except a non-magnetic housing. It is respectfully submitted that the Examiner's stated understanding of the Patarchi reference is in error. With the exception of the embodiment illustrated in Figure 6 of Patarchi, this reference is directed to caseless motors. Figure 4 is directed to an embodiment in which there is but a single stator 2 having a single pair of facing pole pieces and a multiplicity of magnets positioned on a rotor 1. Figure 6 of Patarchi is directed to an oil-encased motor having four groups of stators 2 aligned radially on four axially positioned rotors. Patarchi teaches a number of pole piece pairs of stators that is, at the most, equal to one-half the number of rotor magnets. All of the motor embodiments described in the Patarchi reference are therefore limited in their ability to supply maximum output power. This is totally unlike applicant's specifically claimed invention, which calls for "an even plurality of magnets encased within said rotor..." and "a like plurality of pairs of facing ferromagnetic pole pieces fixedly mounted within said case...." As set forth in applicant's specification, this specific structural arrangement of applicant's claimed disk type motor produces maximum output torque for a motor having a given physical size.

The Examiner has stated that it would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor

of Patarchi with a non-magnetic housing, such as aluminum, as taught by Shtipelman. However, it is applicant's position that neither the Patarchi reference nor the Shtipelman reference contains any showing or suggestion whatsoever for combining those references in the way suggested by the Examiner. In the outstanding obviousness rejections, which include separate prior art references to represent the different features claimed by applicant, it is believed that the Examiner has used applicant's claims as the guide in attempting to piece together the claimed invention, since no suggestion or motivation for combining those references is contained therein. Therefore, any such combination amounts to a reconstruction of applicant's invention using hindsight. It is well settled law that in making a determination as to obviousness, the references must be read without the benefit of applicant's teachings. Even assuming arguendo that the Patarchi and Shtipelman references could be combined without the benefit of applicant's teachings, it is submitted that, for the reasons set forth in detail hereinabove, the combination suggested by the Examiner would still fail to yield applicant's specifically claimed invention, since neither reference contains any showing or suggestion whatsoever of applicant's specifically claimed even plurality of magnets encased within his rotor and a like plurality of pairs of facing ferromagnetic pole pieces fixedly mounted within his motor case.

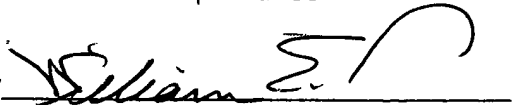
In view of the foregoing amendments and remarks, it is respectfully submitted that applicant's claims 1-5 and 7-11 are all clearly patentable over all of the references of record, taken alone or in any combination, and that this application is now in condition for allowance. Favorable action is

accordingly solicited.

Respectfully submitted,

Orville Phillip Frazee

By

A handwritten signature in black ink, appearing to read "William E. Hein", written over a horizontal line.

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